

This course will review test objects and equipment needed to perform clinical medical physics services in a magnetic resonance imaging (MRI). The historical development of MRI test objects will be reviewed. The material covered will emphasize the recommendations of the AAPM's Magnetic Resonance Task Groups on MRI Quality Assurance and MRI Acceptance Testing. The rationale for image quality tests, including slice thickness and position accuracy, geometric distortion, signal-to-noise ratio, absolute and low contrast spatial resolution, will be discussed. The performance and analysis of these tests, carried out using the phantom of the American College of Radiology's MRI Accreditation Program, will be reviewed in detail. Test objects for advanced, high-speed imaging methods will also be discussed.

Upon completion of this course, participants will be prepared to:

1. Determine appropriate test objects for use in Quality Assurance, ACR Accreditation Compliance Testing, and Acceptance Testing programs for Magnetic Resonance Imaging.
2. Set reasonable acceptance and action criteria for these MRI image quality programs.
3. Produce the appropriate records and reports associated with these programs.

Some of the information in this presentation was developed while the author was a consultant to the American College of Radiology.